An aerial photograph of an industrial facility, likely a refinery or chemical plant, situated along a river. Several large storage tanks and processing units are visible, with thick white smoke or steam rising from some areas. A large ship is docked at a pier in the foreground, and other smaller vessels are in the water. The background shows a cityscape and distant mountains under a clear sky.

Lower Duwamish Waterway Source Control

**TOXICS CLEANUP
PROGRAM**

**NORTHWEST REGIONAL OFFICE
NOVEMBER 18, 2014**



DEPARTMENT OF
ECOLOGY
State of Washington

An aerial photograph of an industrial waterfront. A river flows through the center, with a large bridge crossing it in the lower-left. The riverbanks are lined with various industrial buildings, warehouses, and docks. Several large ships and barges are moored along the river. The background shows a dense forested area on the left and a more developed urban area on the right.

Source Control Update

- Source Control Strategy
- Source Control Projects
- Next Steps



Source Control Strategy: Part I

Source Control Strategy

Ecology's Source Control Strategy is a stand alone 'living' document.

The Source Control Strategy is a integral part of the LDW cleanup.

Source Control Strategy: Goals

Short Term Goal

- Find and sufficiently control sources of sediment contamination before conducting active in-waterway remediation.

Long Term Goal

- Minimize recontamination of sediments after cleanup

Source Control Strategy: Key Parts

- Description of agency roles and regulatory authority, and framework.
- Describes the 24 Source Control Areas: providing Data Gaps Reports and Source Control Action Plans.
- Detailed Implementation Plans will be in appendices.

Source Control Strategy: Current

- **Draft Final published in December 2012**
 - Presented with EPA's Proposed Plan for Public Comment in spring 2013.
- **Received more than 70 comments.**
- Responses will be included in EPA's Responsiveness Summary for the Record of Decision (ROD).

Source Control Strategy: Next

The Draft Strategy is being revised based upon:

- **Additions of the Implementation Plans to the Strategy**
- Public comments

Agency Specific Implementation Plans

Goal: Develop a detailed agency specific plan for conducting source control on the programmatic and site specific levels

- The overarching plan for the next 20-30 years of how **each agency** will manage its programs to address source control
- Intra- and inter-agency coordination between programs
- Ecology, King County, City of Seattle and EPA

Implementation Plan Development

King County

Draft in review

City of Seattle

Draft in review

EPA

Draft in review

Ecology

In development

Goal: Plans will be finalized by end of 2015

Source Control Strategy: Next

The Draft Strategy is being revised based upon:

- Additions of Implementation Plans
- **Public comments**

Recontamination

What do we do when
recontamination
occurs?

Ubiquitous Chemicals

How do we manage
chemicals that are
“everywhere”?

Source Control Strategy Updates

Sufficiency

Is source control
complete enough to
begin cleanup?

Investigations

What are the current
conditions?

Recontamination

- After a sediment cleanup, EPA will determine if recontamination has occurred.
- As needed, Ecology will determine the appropriate source control response on a case-by-case basis.

Ubiquitous Chemicals

- Some chemicals are widespread and found at varied concentrations with undetermined sources.
 - Examples – phthalates and arsenic
- **Work underway:**
 - Identify areas where these chemicals are elevated and determine sources

Sufficiency

Is source control complete enough to begin cleanup?

- **Evaluations** will be conducted after baseline and/or remedial design sampling
 - Areas targeted for active in-water work, dredging, capping, or enhancement areas
 - Not required in monitored natural recovery areas

Sufficiency Evaluations

Sufficiency Criteria

- Qualitative
- Quantitative

Sufficiency Evaluations:

Qualitative Criteria

Source Control Action Plans

- High priorities must be finished
- Medium priorities must be near completion

Business Inspections

- Businesses in evaluation area must be inspected

NPDES Permit

- Permits for direct dischargers, permitted dischargers are in compliance

Sufficiency Evaluations: Quantitative Criteria

- EPA's remedial action levels used as the metric
- Evaluate contaminated sites and permitted facilities only
- Evaluate pathways:
 - Soil to groundwater
 - Direct erosion
 - Groundwater to sediment
 - Storm drain solids

Current Source Control Investigations: Part II

Site Hazard Assessments

- Site Hazard Assessments (SHA) underway for over 200 confirmed or suspected contaminated sites
- **Sites with significant contamination may require Agreed Orders**



Source Control Studies: Industrial Facilities Stormwater Sampling

What are the concentrations of the LDW contaminants in stormwater systems at industrial properties?

- Preliminary data show many LDW contaminants above screening levels at several facilities
- Study continues in 2014-15



Source Control Studies: Cement Kiln Dust

Goal: To determine the scope of the cement kiln dust issue. Is it a sediment problem?

- Identify and map locations of cement kiln dust
- Note any information on leachate, seeps groundwater plumes
- **Draft report due late December 2014**



Green River Investigations

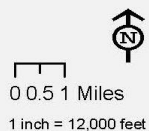
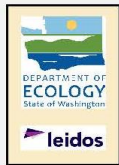
Source Control Studies:

Green-Duwamish River Scoping Study

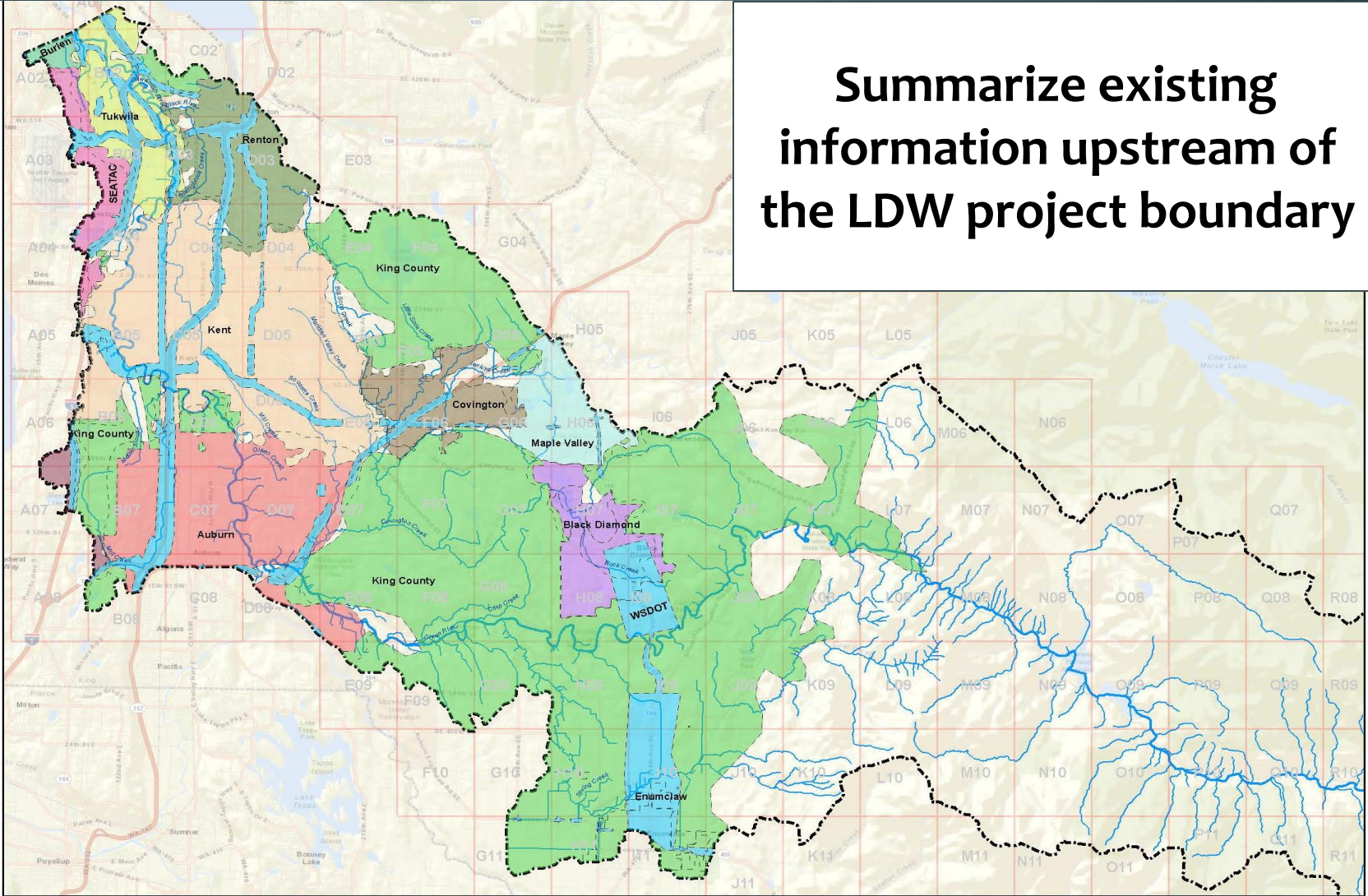
MS4 GIS Database Coverage

GIS Data Source

- Enumclaw
 - WSDOT
 - Tukwila
 - Auburn
 - Black Diamond
 - Burien
 - Covington
 - Des Moines
 - Federal Way
 - Kent
 - King County
 - Maple Valley
 - Renton
 - Seatac
 - Seattle
- Data Overlap
- Study Area



Summarize existing information upstream of the LDW project boundary



Source Control Studies:

Green-Duwamish River Scoping Study

Summarized existing information upstream of the LDW boundary

- **Plotted** contaminated sites, hazardous waste generators, NPDES permittees, air permits, and available sediment data
- **Mapped** storm drains and discharge locations for 14 municipalities & WSDOT with available data.
- **Completed** in 2014.

Source Control Studies:

Green-Duwamish River Loading Study

Goal: Quantify concentrations and instantaneous loadings of toxic chemicals from the Green River

Preliminary Results

- Metals, PAHs, PCBs, and D/Fs always detected on suspended sediment and bed sediment
- Metals, PCBs, & D/Fs (not PAHs) detected in water

Sampling is ongoing

- Report for 2012-13 work is available online

Next Steps: Part III

- Working on prioritizing source control work in preparation for in-water cleanup work.
- Streamlining reporting on source control progress.
- Currently negotiating Memorandum of Agreement with EPA.

Next Steps

- Continue:
 - Implementation Plans: goal of completing them by end of 2015.
 - Investigations and SHA work.
 - Upland cleanups; Existing and New Sites.

A photograph of a waterfront scene. In the foreground, there is a body of water with gentle ripples. To the left, a rocky shoreline is covered with dense green vegetation and trees. In the background, across the water, there are industrial buildings and structures, including what appears to be a shipyard or a large warehouse. The sky is a clear, solid blue. The word "QUESTIONS?" is overlaid in large, white, bold, sans-serif capital letters in the upper center of the image.

QUESTIONS?